

Two Aberrations of *Callosamia promethea* (Lepidoptera: Saturniidae)

by

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Zwei Aberrationen bei *Callosamia promethea* (Lepidoptera: Saturniidae)

Zusammenfassung: Die drei Arten der Gattung *Callosamia* leben im östlichen Nordamerika. In den letzten 25 Jahren wurden unter einigen hundert gefangenen oder gezüchteten Tieren nur zwei bemerkenswerte Aberrationen festgestellt, die hier beschrieben, abgebildet und mit Literaturmeldungen anderer derartiger Aberrationen verglichen werden. Beide Stücke sind im Naturhistorischen Museum in Denver deponiert. Es handelt sich erstens um einen unregelmäßigen Mosaikgynandromorphen von *Callosamia promethea* (Abb. 1), der aus Zuchtpuppen von Ada, Kent Co., Michigan, schlüpfte. Er zeigte in einer Nacht kein weibliches Paarungsverhalten; ein normales Weibchen zum Test in Gegenrichtung stand nicht zur Verfügung. Das zweite Tier ist ein Weibchen von *Callosamia promethea* (Abb. 2) aus Pine Grove, Schuylkill Co., Pennsylvania, mit praktisch symmetrischen Aussparungen in den Hinterflügeln. Solche Löcher in den Flügeln sind oftmals die Folge von Verletzungen im Puppenstadium; jedoch könnten bei so dezidiert symmetrischer Ausbildung auch andere Ursachen in Frage kommen.

Introduction

Moths of the genus *Callosamia* range in eastern North America. Over the past 25 years, I have collected or reared several hundred specimens of the three species, among which only two aberrations have been noted. This paper describes and figures these two specimens, and cites reports of similar specimens from earlier literature. Both specimens described below are in the Denver Museum of Natural History (see News of the Lepidopterists' Society, January/February 1991, page 3).

Gynandromorphs and sexual mosaics

At least four gynandromorphs of *Callosamia promethea* (DRURY) have been reported; one was given by HESSEL (1964), and SCHÜSSLER (1934: 587) listed literature citations for the other three. SKINNER (1918) described a perfectly bilateral gynandromorph of *Callosamia angulifera* (WALKER), collected at light, that was male on the left side and female

on the right. The locations of most of the five aforementioned specimens are not known, because they were kept in private collections.

Last winter I purchased a small lot of cocoons of *Callosamia promethea* from Wally BUTTRICK who had reared them in July 1993 in Michigan. The stock was from Ada, Kent County, Michigan. Emergences in Colorado were in May 1994. On 24 May I observed a sexual mosaic in the cage. Since the specimen appeared to contain ova, it was kept at room temperature overnight and caged the next morning with a male that had emerged on 24 May. The following afternoon and early evening no calling behavior was observed. No female of *C. promethea* was available to see if the gynandromorph would respond to pheromone. The specimen was killed and preserved on the evening of 25 May.

This specimen (Figure 1) is not a perfect gynandromorph, although the wings on the right are predominantly female and those on the left male. Both antennae are male. External view of the tip of the abdomen suggests that the genitalia are more male than female; the specimen was not dissected. The body has red scales (as in females; males have black body scales) and small components of female coloration are in the left forewing. Small components of male coloration are in the right forewing. The right hindwing is about half male and half female.

The mosaic gynandromorph of *C. promethea* described above is very similar to one of the saturniid *Antheraea paphia* (LINNAEUS) (= *mylitta* (DRURY)) described and illustrated by SCHWARTZ & LEMAIRE (1974). Another sexual mosaic of *A. paphia* was mentioned by WATSON (1911: 6).

MANLEY (1971) described two sexual mosaic gynandromorphs of the saturniid *Automeris io* (FABRICIUS), and speculated on the genetic basis for such specimens. A bilateral gynandromorph of *A. io* (but both antennae are male) is in the Texas A&M University Entomology Department collection. It was collected in Alice, Jim Wells County, Texas, on 30 December 1969, by J. NEIKIRK.

Specimens with excisions in wings

A female of *Callosamia promethea* (Fig. 2), with excisions in the outer edges of the hindwings, was reared by me 7 June 1975 from a cocoon that I purchased from William H. HOUTZ. He reared the larva in 1974 on spicebush (*Lindera benzoin* (LINNAEUS) BLUME, Lauraceae), at Pine Grove, Schuylkill County, Pennsylvania, from local stock. The symmetrical excisions are in the costal angles and anal angles of both hindwings. A tiny excision is in the anal angle of the right forewing.

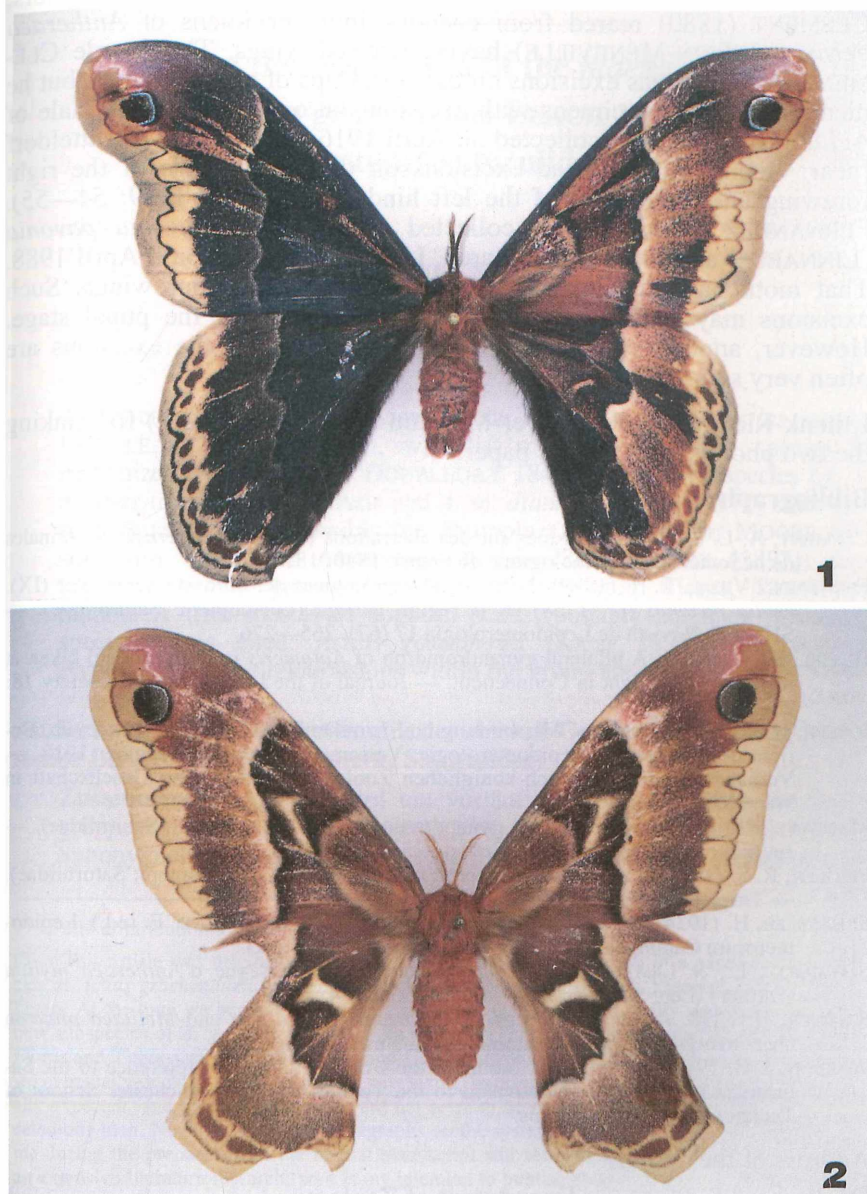


Fig. 1: Sexual mosaic gynandromorph of *Callosamia promethea*.

Fig. 2: Female of *Callosamia promethea* with excisions on wings.

Similar specimens of Saturniidae have been illustrated by other authors. CLÉMENT (1880) reared from cocoons four specimens of *Antheraea pernyi* (GUÉRIN-MÉNEVILLE) having excised wings. The female CLÉMENT illustrated has excisions on the costal tips of all four wings, but he mentioned other specimens with excisions on one side only. A male of *Agria tau* (LINNAEUS) collected 30 April 1916 at Satzberg bei Hütteldorf [near Vienna, Austria] had excisions on the costal angle of the right forewing and anal angle of the left hindwing (JOSEPH 1919: 54—55). FERNÁNDEZ VIDAL (1989) collected a female of *Saturnia pavonia* (LINNAEUS) at light in Jubia, Narón, La Coruña, Spain, on 9 April 1988. That moth has excisions on the anal angles of all four wings. Such excisions may be due to mechanical damage during the pupal stage. However, another explanation may be needed since the excisions are often very symmetrical.

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